

The following claims are presented for examination:

1. (currently amended) A tubular conduit comprising:
  - a tubular portion **comprising an inside and an outside and being** made from a flexible material;
  - an axially extending external helical formation located around the outside of the tubular portion for supporting the tubular portion; and
  - an axially extending internal helical protrusion located around the inside of the tubular portion for imparting a helical flow to a fluid passing through the tubular portion.
2. (currently amended) A tubular conduit according to claim 1 for use as a graft  
~~, preferably a vascular graft .~~

Claims 3-39 (canceled)

40. (new) A tubular conduit according to claim 2 wherein the graft is a vascular graft
41. (new) A tubular conduit according to claim 1 wherein the internal helical protrusion comprises a section of the tubular portion deformed by an axially extending deformation helix.
42. (new) A tubular conduit according to claim 41 wherein the axially extending deformation helix is made from polyurethane.
43. (new) A tubular conduit according to claim 41 wherein the axially extending deformation helix is sintered to the flexible material of the tubular portion.
44. (new) A tubular conduit according to claim 1 wherein the external helical formation has a different helix angle from the internal helical protrusion.
45. (new) A tubular conduit according to claim 44 wherein the helix angle of the external helical formation is greater than the helix angle of the internal helical protrusion.
46. (new) A tubular conduit according to claim 1 wherein the helix angle of the internal helical protrusion is between 8° and 20°.
47. (new) A tubular conduit according to claim 1 wherein the helix angle of the external helical formation is greater than 50°.

48. (new) A tubular conduit according to claim 47 wherein the helix angle of the external helical formation is between 65° and 80°.

49 (new) A tubular conduit according to claim 1 wherein the tubular portion is made from ePTFE.

50. (new) A tubular conduit according to claim 1 wherein the external helical formation is made from polyurethane.

51. (new) A tubular conduit according to claim 1 wherein the inside of the tubular portion has a carbon coating.

52. (new) A tubular conduit according to claim 1 wherein the external helical formation is sintered to the flexible material of the tubular portion.

53. (new) A method of making a tubular conduit comprising the steps of:

- (a) providing a tubular portion comprising an inside and an exterior and being made from a flexible material;
- (b) flowing a moulding liquid in an axially extending, helical form around the exterior of the tubular portion; and
- (c) solidifying the moulding liquid.

54. (new) A method according to claim 53 wherein step (b) comprises the step of flowing a moulding liquid in two axially extending helical forms around the exterior of the tubular portion.

55. (new) A method according to claim 54 wherein the two helical forms each has a different helix angle.

56. (new) A method according to claim 53 wherein step (b) comprises: (i) deforming the tubular portion so as to provide an internal helical protrusion on the inside of the tubular portion and a corresponding external helical groove; and (ii) flowing the moulding liquid into the external helical groove to form an axially extending helical form.

57. (new) A method according to claim 56 wherein step (b) comprises the step of flowing a moulding liquid in two axially extending helical forms around the exterior of the tubular portion; and

wherein the two helical forms each has a different helix angle; and  
wherein the helix angle of the moulding liquid flowed into the external helical groove  
is less than the helix angle of the other axially extending helical form.

58. (new) A method according to claim 56 wherein the helix angle of the moulding liquid  
flowed into the external helical groove is between 8° and 20°.

59. (new) A method according to claim 53 wherein step (b) comprises locating the  
tubular portion over a mandrel; and encasing the tubular portion within a mould such that  
the tubular portion is sandwiched between the mandrel and the mould.

60. (new) A method according to claim 56 wherein step (b) comprises locating the  
tubular portion over a mandrel; and encasing the tubular portion within a mould such that  
the tubular portion is sandwiched between the mandrel and the mould, the mandrel having  
an axially extending helical channel on its surface and wherein step (i) further comprises  
the step of introducing the moulding liquid between the tubular portion and the mould such  
that the moulding liquid deforms the tubular portion by pressing the tubular portion into the  
helical channel on the mandrel to provide the internal helical protrusion.

61. (new) A method according to claim 60 further comprising, between the steps of  
locating of the tubular portion over the mandrel and encasing the tubular portion within the  
mould, the step of: pushing the tubular portion at least partially into the helical channel on  
the mandrel.

62. (new) A method according to claim 60 wherein the step of introducing the moulding  
liquid comprises injecting the moulding liquid into the mould above the helical channel in  
the mandrel.

63. (new) A method according to claim 59 wherein the mould has an axially extending  
helical channel about its inside surface and wherein step (b) further comprises the step of  
introducing the moulding liquid between the tubular portion and the mould such that the  
moulding liquid flows into the helical channel in the mould.

64. (new) A method according to claim 63 wherein the helix angle of the helical channel  
in the mould is greater than 50°.

65. (new) A method according to claim 64 wherein the helix angle of the helical channel in the mould is between 65° and 80°.

66. (new) A method according to claim 53 further comprising, between steps (b) and (c), the step of sintering the moulding liquid onto the flexible material of the tubular portion.

67. (new) A method according to claim 53 wherein step (b) is carried out between 600 and 800 kPa and between 170 and 210°C.

68. (new) A method according to claim 67 wherein step (b) is carried out at 689 kPa and 190°C.

69. (new) A method according to claim 53 further comprising the step of coating the inside the tubular portion with carbon.

70. (new) A method according to claim 53 wherein the moulding liquid is polyurethane.

71. (new) A method according to claim 53 wherein the flexible material is ePTFE.

72. (new) A mould for providing a helical formation onto a tubular conduit comprising:  
a mandrel having an outer surface on which the tubular conduit is locatable, the mandrel having an axially extending helical channel on its outer surface; and  
a moulding block having a bore for receiving the mandrel with the tubular conduit located thereon.

73. (new) A mould according to claim 72 wherein the mandrel has an axially extending helical channel on its inner surface.

74. (new) A mould according to claim 73 wherein the helix angle of the helical channel on the bore is different from the helix angle of the helical channel on the mandrel.

75. (new) A mould according to claim 74 wherein the helix angle of the helical channel on the bore is greater than the helix angle of the helical channel on the mandrel.

76. (new) A mould according to claim 72 wherein the helix angle of the helical channel on the mandrel is between 8° and 20°.

77. (new) A mould according to claim 73 wherein the helix angle of the helical channel on the bore is greater than 50°.

78. (new) A mould according to claim 77 wherein the helix angle of the helical channel on the bore is between 65° and 80°.

79. (new) A method according to claim 53 wherein the tubular conduit is a vascular graft.

80. (new) A mould according to claim 72 wherein the tubular conduit is a vascular graft.